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September 4, 1992

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Attn: Section 8(e) Coordinator (CAP Agreement)

Re: CAP Agreement Identification No. 8ECAP-0110

Dear Sir or Madam:

Union Carbide Corporation ("Union Carbide") herewith submits the following report pursuant to the terms of the TSCA §8(e) Compliance Audit Program and Union Carbide's CAP Agreement dated August 14, 1991 (8ECAP-0110). This report describes acute and 7-day toxicity studies with 2-methyl-5-ethyl pyridine (CASRN 104-90-5).

"2-Methyl-5-Ethyl Pyridine (1974 Results): Range Finding Toxicity and 7-Day Dietary Inclusion Studies", Chemical Hygiene Fellowship (Carnegie-Mellon University), Special Report 38-117, September 15, 1975.

A complete summary of this report is attached.

Previous TSCA Section 8(e) or "FYI" Submission(s) related to this substance are:

(None)

Previous PMN submissions related to this substance are: (None)

This information is submitted in light of EPA's current guidance. Union Carbide does not necessarily agree that this information reasonably supports the conclusion that the subject chemical presents a substantial risk of injury to health or the environment.

38-117

RECEIVED
12-7-99

(2)

In the attached report the term "CONFIDENTIAL" may appear. This precautionary statement was for internal use at the time of issuance of the report. Confidentiality is hereby waived for purposes of the needs of the Agency in assessing health and safety information. The Agency is advised, however, that the publication rights to the contained information are the property of Union Carbide.

Yours truly,



William C. Kuryla, Ph.D.
Associate Director
Product Safety
(203/794-5230)

WCK/cr

Attachment (3 copies of cover letter, summary, and report)

SUMMARY

Special Report 38-117
9 Pages
Confidential

September 15, 1975
Tel: (412) 327-1020

CHEMICAL HYGIENE FELLOWSHIP
Carnegie-Mellon Institute of Research
Carnegie-Mellon University
4400 Fifth Avenue
Pittsburgh, PA 15213

2-Methyl-5-Ethyl Pyridine

(1974 Results)

Range Finding Toxicity and 7-Day Dietary Inclusion Studies

Sponsor: *Union Carbide Corporation*, Chemicals and Plastics Operations Division

* * * * *

Summary

	<u>1974 Results</u>	<u>Previous Results</u>
Stomach Intubation, rat LD50	1.30 ml/kg; undiluted	1.54 gm/kg; 20% in distilled water + 1% TERGITOL 7 (1949)
Skin Penetration, rabbit LD50	0.566 ml/kg; undiluted	1.00 ml/kg undiluted; (1955)
Inhalation, rat Substantially saturated vapor, dynamic conditions, LT50	-	2.5 hours (1949)
Vapor at metered concentration, 4 hours; LC50	540 ppm	790 ppm (1949)
Covered Skin Irritation, rabbit 4-hour D.O.T. test	2 of 2 with necrosis	-
Uncovered Skin Irritation, rabbit	minor, Grade 4	moderate, Grade 6 (1949)
<u>Eye Injury</u> , rabbit	severe, <u>Grade 8</u>	severe, Grade 9 (1949)
Seven-Day Dietary Inclusion, rat	Minimum (MiE) effect at 0.90 gm/kg/day; Maximum no ill- effect at 0.40 gm/ kg/day	-

SUMMARY

2.

Peroral, Single Dose to Rats

LD50 - 1.30 (0.96 to 1.75) ml/kg; undiluted.

Conditions - standard.

Dosage; ml/kg	Dead Dosed	Days to Death	Weight Change	Signs and/or Symptoms
2.0	5/5	0,0,0,0,0	-	Sluggish 1 min; prostrate, deep breathing, loss of balance 4 min; <u>death 15 min to 4 hours.</u>
1.0	1/5	0	10 to 101	Sluggish 2 min; gasping 4 min; prostrate 8 min; death 4 hours.

September 15, 1975
Tel: (412) 327-1020

CHEMICAL HYGIENE FELLOWSHIP
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4400 Fifth Avenue
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2-Methyl-5-Ethyl Pyridine

(1974 Results)

Range Finding Toxicity and 7-Day Dietary Inclusion Studies

Sponsor: *Union Carbide Corporation*, Chemicals and Plastics Operations Division

* * * * *

Summary

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Uncovered Skin Irritation, rabbit	minor, Grade 4	moderate, Grade 6 (1949)
Eye Injury, rabbit	severe, Grade 8	severe, Grade 9 (1949)
Seven-Day Dietary Inclusion, rat	Minimum (MiE) effect at 0.90 gm/kg/day; Maximum no ill- effect at 0.40 gm/ kg/day	-

Interpretation

2-Methyl-5-ethyl pyridine was moderately toxic following acute peroral and skin penetration routes of administration. It was "corrosive" to covered skin by D.O.T. definition. The undiluted material resulted in minor irritation when applied to uncovered rabbit skin. Severe corneal injury, with iritis, resulted from instillation of small undiluted quantities or from 15% in propylene glycol. A metered concentration of 370 ppm, inhaled by rats for 4 hours, resulted in slight coordination loss; thus inhalation of the vapor near this concentration or above should be avoided.

Rats receiving 0.90 gm/kg/day (MiE) of 2-methyl-5-ethyl pyridine in their diets for 7 days gained less body weight than their controls but no significant effect, in the criteria examined, resulted at 0.40 gm/kg/day. The ratio of single peroral LD50/MiE was 1.44, probably indicating a low degree of chronicity.

Most of the results from these latest range finding tests did not differ significantly from those of the 1949 tests (Report 13-7) or the 1955 tests (Report 18-37). Two minor exceptions were the slight decreases in skin irritation (Grade 4 compared to Grade 6 in 1949) and in eye injury (Grade 8 compared to Grade 9 in 1949).

Sample

Quantity: 1 quart	Date Received: 7-16-74	CHF Sample No.: 37-390
Submitted By: R. V. Berthold	Division: Chemicals and Plastics	South Charleston, WV
Identification: Passed IS-720043	Charge No.: 01067	
4-18-74		

Peroral, Single Dose to Rats

LD50 - 1.30 (0.96 to 1.75) ml/kg; undiluted.

Conditions - standard.

Dosage; ml/kg	Dead Dosed	Days to Death	Weight Change	Signs and/or Symptoms
2.0	5/5	0,0,0,0,0	-	Sluggish 1 min; prostrate, deep breathing, loss of balance 4 min; death 15 min to 4 hours.
1.0	1/5	0	10 to 101	Sluggish 2 min; gasping 4 min; prostrate 8 min; death 4 hours.

Gross Pathology - slight petechial hemorrhage of the lungs; stomachs transparent, gas-filled; intestines transparent, injected; kidneys slightly congested and speckled.

Conclusions - moderately toxic following acute peroral intubation.

Skin Penetration, Single Dose to Rabbits

LD50 - 0.566 (0.259 to 1.23) ml/kg; undiluted.

Conditions - standard. Dosed in fume hood under polyethylene sheeting.

Dosage; ml/kg	Dead Dosed	Days to Death	Weight Change	Skin Irritation	Signs and/or Symptoms
0.80	3/4	1,1,2	-123	necrosis	-
0.40	1/4	1	-105,-44, -23	necrosis	-
0.20	0/2	-	18,322	-	-

Gross Pathology - in victims, congestion of lungs, livers and spleens; livers mottled.

Conclusions - moderately toxic following acute covered dermal application.

Inhalation, Single, by Rats

Conditions - Procedure D at 24°C. The sample was metered into a heated vaporizer through which a metered flow of N₂ gas was maintained. The resultant vapor:N₂ mixture was then diluted with air and a sufficient flow of O₂ to produce a 20.9% O₂ concentration before being directed into the animal chamber.

Proce- dure	Time	Concen- tration	Dead Dosed	Death	Weight Change	Signs and/or Symptoms
D	4 hr	790 ppm	6/6	5 in ex- posure, one at 2 hr post exposure	-	Eyes partly closed and very poor coordination within 1.25 hr; all prostrate within 2 hr; 2 dead within 2.75 hr; 5 dead at 4 hr.
D	4 hr	370 ppm	0/6	-	47 to 76	Slight loss of coordination, eyes partly closed within 4 hr.

Gross Pathology - victims: lungs congested.
survivors: nothing remarkable.

Conclusions - inhalation of a metered concentration as low as 370 ppm resulted in slight coordination loss; therefore, inhalation of vapor at similar concentrations or above should be avoided

LC50 = 540 (420 to 690) ppm

Skin Irritation, Rabbit, Covered

Conditions - 4-hr D.O.T. test.

Conclusions - 2 of 2 rabbits with necrosis; therefore, a "corrosive" material.

Skin Irritation, Rabbit, Uncovered

Conditions - standard.
Applied undiluted.

Conclusions - moderate erythema on 5 rabbits. Grade 4.

Eye Irritation, Rabbit

Conditions - standard.
Instilled undiluted or in propylene glycol (PG).

Conclusions - severe corneal injury, with iritis, from 0.005 ml undiluted per eye or from 0.5 ml per eye of 15% in PG; no to minor corneal injury, with iritis on one, from 5% in PG. Grade 8.

SEVEN-DAY DIETARY INCLUSION, RATSProcedure

2-Methyl-5-ethyl pyridine was added to ground PURINA Laboratory Chow and fed in the diet for 7 days. Groups of 5 male and 5 female Harlan-Wistar albino rats, 30 days of age at the start of the study, were randomly assigned to each dosage level and to each of 2 control levels.

Results

The results are summarized in Table 38-1 and a synopsis of pathology is given in Table 38-2.

Inclusion of 2-methyl-5-ethyl pyridine in the diet for 7 days resulted in severe depression of body weight gains at the highest dosage levels, 0.90 gm/kg/day for male rats and 0.99 gm/kg/day for females. At 0.40 gm/kg/day, weight gains for female rats were slightly depressed compared to one of the two control groups after 7 days of doses. Liver weights expressed as percentage of body weights for females at the highest level were slightly greater than those of one control group. There were no statistically significant body weight or organ weight differences at 0.43 or 0.17 gm/kg/day for males, nor at 0.18 gm/kg/day for females.

On micropathological examination of tissues from the highest dosage levels and control groups, there were a few scattered lesions found at both levels. These were considered by the pathologist to be lesions common to this species with no apparent relationship to dosage.

Conclusions

The maximum no significant ill-effect level was 0.40 gm/kg/day based on body weight, liver and kidney weight, and micropathology. The ratio between the single peroral LD50 and the minimum effect level (MiE) for the 7-day feeding study was $1.30 \text{ ml/kg} \div 0.90 \text{ gm/kg}$ or 1.44, probably indicating a low degree of chronicity. The median predicted minimum effect level for 90-day rat feeding is 0.30 gm/kg; that for two years is 0.17 gm/kg (Weil *et al.*, "Toxicology and Applied Pharmacology" 14, 426-431, 1969).

Literature on 2-methyl-5-ethyl pyridine includes a Russian study in which rats received 0.1 to 1.0 mg/kg/day orally for 90 to 120 days. The results included reduced oxygen uptake and a reduced level of glycogen in the liver. Also an increased level of lactic acid in the liver was observed. (Novikova, R. F. and Konvai, V. D., "Carbohydrate Metabolism during Chronic Peroral Poisoning of Rats with Small Doses of 2-Methyl-5-Ethyl Pyridine," Mater. Nauch. Sess., Posvyashch. 50 - Letiyu Obrazov. SSSR 1972, 866-8 (Russ) Chem. Abst. 80, 100370. 1974).

Roy C. Myers
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Research Associate

Carrol S. Weil
Carrol S. Weil, M.A.
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Approved:

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Single Peroral Test

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Gross Pathology

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Micropathology

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Advisory Fellow

Date: September 26, 1975

Typed: acc

Standard Test Procedures

In all tests, the nonfasted animals are maintained on appropriate Rockland diets and water ad lib except during period of manipulation or confinement. Dosage levels differ by a factor of 2 in a geometric series. LD50s or LC50s are calculated by the moving average method based on a 14-day observation period.

Peroral. Compounds administered by stomach intubation to Wistar derived male rats, 90-120 grams in weight and 3 to 4 weeks of age, reared in our own colony.

Skin Penetration. Male albino rabbits, 3 to 5 months of age, are immobilized during the 24-hour contact period with the compound retained under impervious sheeting on the clipped intact skin of the trunk. Thereafter, excess fluid is removed to prevent ingestion. Maximum dosage that can be retained is 20 ml./kg.

Inhalation. Procedure A. Concentrated vapor is generated in a gas washing bottle by passing dried air at 2.5 liters/min. through a fritted glass disc immersed to a depth of at least 1-1/2 inches in the chemical which is delivered to rats in a 9-liter glass exposure chamber. Mean vapor concentration is calculated from the loss in weight of the liquid or estimated from the vapor pressure at the actual temperature of the chemical during aeration.

Procedure B. Substantially saturated vapor is prepared by spreading 50 grams of chemical over 200 cm.² area on shallow tray placed near the top of a 120-liter glass chamber which is then sealed for at least 16 hours while an intermittently operated fan agitates the internal chamber atmosphere. Rats are then introduced in a gasketed drawer-type cage designed and operated to minimize vapor loss.

Procedure C. Mist, vapor and any oxidation or decomposition products of the chemical held at 170°C. are generated and delivered as in A.

Procedure D. Vapor at metered concentration, not checked analytically, is generated by feeding the liquid at a constant rate down the inside of a spirally corrugated surface of a minimally heated one inch Pyrex tube, through which metered air is passed. Resultant vapor is delivered as in A.

Procedure E. Spray - Solutions or suspensions are atomized in a glass VAPONEFRIN nebulizer using dried compressed air at 9 liters/min. (corrected) and 22 p.s.i. The resultant aerosol of droplets averaging 2 microns in diameter is conducted directly into a 60-liter cubic glass chamber containing rats. Mean aerosol concentration is calculated from the amount of material atomized.

Procedure F. Dust - Dust clouds are generated by a baffled Wright Dust Feed through which air is passed at 20 liters/min. (uncorrected) at 15 p.s.i. The dust is delivered directly to a 120-liter plexiglas chamber containing rats. Airborne dust concentrations are measured gravimetrically every half hour.

Skin Irritation. Chemical is applied in 0.01 ml. amounts to clipped, uncovered intact skin of 5 rabbit bellies either undiluted or in progressive dilutions of 10, 1, 0.1, and 0.01% in solvent. Ten grades are recognized based on appearance of moderate or marked capillary injection, erythema, edema or necrosis within 24 hours. No injury from undiluted = Grade 1.

Eye Irritation. Eyes not staining with 5% fluorescein in 20 seconds contact are accepted. Single instillation of 0.005, 0.02, 0.10 or 0.5 ml. undiluted or of 0.5 ml. of 40, 15, 5 and 1% dilutions are made into conjunctival sac of 5 rabbits. Read immediately unstained and after fluorescein at 24 hours, with ten grades recognized. Trace or no injury from 0.5 ml. undiluted = Grade 1.

Table 38-1

Summary of Results of 7 Days of Inclusion of 2-Methyl-5-Ethyl Pyridine
in the Diet of Rats

	Male Rats				
				A	B
Dosage goal, gm/kg	1.0	0.40	0.16	0.0	0.0
Concentration in diet, %	0.94	0.37	0.14	0.0	0.0
Dosage attained, gm/kg/day	0.90	0.43	0.17	0.0	0.0
Diet consumed, gm/rat/day	12.1	16.1	15.4	16.2	17.3
<u>Body weight change, gm</u>					
1 day of doses	-4.2 ^{c,c,x}	1.8	3.4	4.4	5.0
4 days of doses	7.8 ^{c,c}	24.4	21.8	23.6	29.4
7 days of doses	19.8 ^{b,c}	45.6	39.2	43.4	46.4
Liver weight, gm	6.81	7.91	7.09	7.37	7.34
Liver wt as % of body wt	4.94	4.86	4.78	4.68	4.63
Kidney weight, gm	1.31	1.53	1.37	1.47	1.46
Kidney wt as % of body wt	0.95	0.94	0.92	0.94	0.92
Mortality	0	0	0	0	0
	Female Rats				
Dosage goal, gm/kg	1.0	0.40	0.16	0.0	0.0
Concentration in diet, %	0.96	0.36	0.15	0.0	0.0
Dosage attained, gm/kg/day	0.99	0.40	0.18	0.0	0.0
Diet consumed, gm/rat/day	11.7	12.6	14.6	14.5	14.3
<u>Body weight change, gm</u>					
1 day of doses	-7.4 ^{c,c}	1.2	3.8	2.6	3.4
4 days of doses	6.2 ^{c,c}	24.2	20.2	18.8	18.6
7 days of doses	12.8 ^{c,c}	26.6 ^{-,a}	37.2	31.2	34.4
Liver weight, gm	6.43	6.24	7.15	6.45	6.12
Liver wt as % of body wt	5.36 ^{-,b}	5.00	4.98	4.86	4.61
Kidney weight, gm	1.15	1.18	1.33	1.25	1.24
Kidney wt as % of body wt	0.96	0.95	0.92	0.95	0.94
Mortality	0	0	0	0	0

^a0.05 > P > 0.01^b0.01 > P > 0.001^cP < 0.001

^x1st letter of superscript denotes degree of significance *versus* control group A;
 2nd letter denotes degree of significance *versus* control group B.

Table 38-2

Synopsis of Pathology of Rats that Received 2-Methyl-5-Ethyl Pyridine
in their Diets for 7 Days

		Males		Females	
		gm/kg in Diet; 2-Methyl 5-Ethyl Pyridine			
		1.0	0.0	1.0	0.0
<u>Total Number Examined Grossly:</u>		5	5	5	5
<u>LUNG:</u> Number Examined	(M)	5	5	5	5
Petechiae	(G)	0	1	0	0
Pleural adhesions	(G)	1	0	0	0
Pneumonia	(G)	1	0	0	1
Hemorrhages	(M)	0	1	0	0
Interstitial thickening	(M)	1	1	2	1
Bronchiolitis obliterans	(M)	0	0	0	1
Purulent bronchopneumonia	(M)	1	0	0	0
Subacute bronchopneumonia	(M)	0	0	0	1
Abscess formation	(M)	1	0	0	0
<u>LIVER:</u> Number Examined	(M)	5	5	5	5
Round cell foci	(M)	3	2	3	1
<u>KIDNEY:</u> Number Examined	(M)	5	5	5	5
Hydronephrosis	(G)	1	0	0	0
Hydronephrosis	(M)	1	0	0	0
Tubular regeneration	(M)	0	3	0	0
<u>TRACHEA:</u> Number Examined	(M)	5	5	5	5
Tracheitis	(M)	3	2	2	3
Chronic tracheitis	(M)	1	0	2	0
Inhaled blood	(M)	0	1	0	0
<u>COLON:</u> Number Examined	(M)	5	5	5	5
Section parasites	(M)	0	0	1	0

G = Gross

M = Microscopic

The following tissues were examined microscopically on all animals: lung, livers, kidneys, heart, spleen, adrenal, thyroids, parathyroids, trachea, esophagus, stomach, duodenum, pancreas, colon, urinary bladder, brain, pituitary and uterus and ovary, or prostate, testicle and epididymis.

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Project Initiator

3 - R. V. Berthold



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

William C. Kuryla, Ph.D.
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39 Old Ridgebury Road
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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MAR 06 1995

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and refer to the reverse side of this page for "EPA Information Requests".

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

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Attn: TSCA Section 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan
Terry R. O'Bryan
Risk Analysis Branch

Enclosure

12060A



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Triage of 8(e) Submissions

Date sent to triage: MAY 05 95

NON-CAP

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entire document: 0 1 2 pages 1,2

pages 1,2,3,4,5

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1/18/95

CECATS DATA: 0992 - 12060 SEQ. ASubmission # 8810TYPE: INT: SUPP FLWPSUBMITTER NAME: Union CarbideCorporationINFORMATION REQUESTED: FLWP DATE: 09/15/92
0501 NO INFO REQUESTED
0502 INFO REQUESTED (TECH)
0503 INFO REQUESTED (VOL. ACTIONS)
0504 INFO REQUESTED (REPORTING RATIONALE)
DISPOSITION:
0639 REFER TO CHEMICAL SCREENING
0678 CAP NOTICEVOLUNTARY ACTIONS:
0401 NO ACTION REQUIRED
0402 STUDIES PLANNED/IN PROGRESS
0403 NOTIFICATION OF WORKING METHOD
0404 LABEL/MSDS CHANGES
0405 PROCESS/ANAL. INC. CHANGES
0406 APP. USE DISCONTINUED
0407 PRODUCTION DISCONTINUED
0408 CONFIDENTIALSUB. DATE: 09/04/92 CSRAD DATE: 12/07/94

CHEMICAL NAME:

CASE# 104-90-5

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0201	ONCO (HUMAN)	01 02 04	0216	EPICLIN	01 02 04	0241	IMMUNO (ANIMAL)	01 02 04
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0204	MUTA (IN VITRO)	01 02 04	0219	HUMAN EXPOS (MONITORING)	01 02 04	0244	CLASTO (IN VITRO)	01 02 04
0205	MUTA (IN VIVO)	01 02 04	0220	ECOAQUA TOX	01 02 04	0245	CLASTO (ANIMAL)	01 02 04
0206	REPRO/TERATO (HUMAN)	01 02 04	0221	ENV. OCCUR/EL.FATE	01 02 04	0246	CLASTO (HUMAN)	01 02 04
0207	REPRO/TERATO (ANIMAL)	01 02 04	0222	EMER ENCI OF ENV CONTAM	01 02 04	0247	DNA DAM/REPAIR	01 02 04
0208	NEURO (HUMAN)	01 02 04	0223	RESPONSE REOBT DELAY	01 02 04	0248	PRODUSE/PROC	01 02 04
0209	NEURO (ANIMAL)	01 02 04	0224	PROD/COMF/CHEM ID	01 02 04	0251	MSDS	01 02 04
0210	ACUTE TOX. (HUMAN)	01 02 04	0225	REPORTING RATIONALE	01 02 04	0259	OTHER	01 02 04
0211	ACUTE TOX. (ANIMAL)	01 02 04	0226	CONFIDENTIAL	01 02 04			
0212	CHR. TOX. (HUMAN)	01 02 04	0227	ALLERG (HUMAN)	01 02 04			
0213	ACUTE TOX. (ANIMAL)	01 02 04	0228	ALLERG (ANIMAL)	01 02 04			
0214	SUB ACUTE TOX (ANIMAL)	01 02 04	0229	METAB/PHARMACO (ANIMAL)	01 02 04			
	SUB CHRONIC TOX (ANIMAL)	01 02 04	0230	METAB/PHARMACO (HUMAN)	01 02 04			
	CHRONIC TOX (ANIMAL)	01 02 04						

TRIALS DATA: NON-CBL INVENTORYYES

ONGOING REVIEW

YES (DROP/REFER)

CAS SR

NO

NO (CONTINUE)

IN TERMINI

SPECIES

RAT

TOXICOLOGICAL CONCERN:

LOWRBTMEDHIGH

USE:

PRODUCTION:

1-390213

-CPSS- 0927952113

0 0 0 0 0 0 0 0 0 0 0

> <ID NUMBER>

8(E)-12060A

> <TOX CONCERN>

L/M

> <COMMENT>

EYE IRRITATION IN RABBITS IS MEDIUM CONCERN. WHEN 0.005 ML OF UNDILUTED TEST MATERIAL OR 0.5 ML OF A 15% SOLUTION WAS INSTILLED SEVERE CORNEAL INJURY WITH IRITIS OCCURRED. A 5% SOLUTION RESULTED IN NONE TO MINOR CORNEAL INJURY WITH IRITIS. IN AN EARLIER STUDY THE TEST MATERIAL WAS CONSIDERED A SEVERE IRRITANT AND GRADED 9.

SKIN IRRITATION IN RABBITS IS MEDIUM CONCERN. A 4 HOUR COVERED EXPOSURE TO THE TEST MATERIAL RESULTED IN NECROSIS IN 2 OUT OF THE 2 ANIMALS TESTED. AN UNCOVERED EXPOSURE TO UNDILUTED TEST MATERIAL RESULTED IN MODERATE ERYTHEMA IN 5 RABBITS. THE TEST MATERIAL WAS CONSIDERED TO BE A MINOR IRRITANT. IN AN EARLIER STUDY THE TEST MATERIAL WAS CONSIDERED TO BE A MODERATE IRRITANT AND GRADE 6.

ACUTE INHALATION TOXICITY IN RATS IS MEDIUM CONCERN FOR A 4 HOUR EXPOSURE BASED ON AN LC50 OF 540 PPM. DOSE (PPM) AND MORTALITY: 790 (6/6) AND 370 (0/6). CLINICAL SIGNS INCLUDED EYES PARTLY CLOSED, VERY POOR COORDINATION, AND PROSTRATION. PATHOLOGIC EXAM OF DECEDENTS REVEALED CONGESTED LUNGS. IN A PREVIOUS STUDY THE LC50 FOR A 4 HOUR EXPOSURE WAS DETERMINED TO BE 790 PPM. IN ANOTHER EARLIER STUDY, THE LT50 WAS DETERMINED TO BE 2.5 HOURS FOR A SUBSTANTIALLY SATURATED VAPOR.

ACUTE DERMAL TOXICITY IN RABBITS IS MEDIUM CONCERN BASED ON AN LD50 OF 0.566 ML/KG FOR UNDILUTED TEST MATERIAL. DOSE (ML/KG) AND MORTALITY: 0.20 (0/2), 0.40 (1/4), AND 0.80 (3/4). CLINICAL OBSERVATIONS INCLUDED NECROSIS AND WEIGHT CHANGES. PATHOLOGIC EXAM OF DECEDENTS REVEALED CONGESTION OF LUNGS, LIVER AND SPLEEN, AND MOTTLED LIVERS. IN A PREVIOUS STUDY THE LD50 FOR UNDILUTED TEST MATERIAL WAS 1.00 ML/KG.

ACUTE ORAL TOXICITY IN RATS IS LOW CONCERN BASED ON AN LD50 OF 1.30 ML/KG. DOSE (ML/KG) AND MORTALITY WERE 2.0 (5/5) AND 1.0 (1/5). CLINICAL SIGNS INCLUDED SLUGGISHNESS, PROSTRATION, DEEP BREATHING, LOSS OF BALANCE, AND GASPING. PATHOLOGIC EXAM REVEALED CHANGES TO THE LUNGS, STOMACH, INTESTINES, AND KIDNEYS. IN A PREVIOUS STUDY THE LD50 FOR A 20% SOLUTION WAS DETERMINED TO BE 1.54 G/KG.

SUBACUTE ORAL TOXICITY IN RATS IS LOW CONCERN. THE MAXIMUM NO SIGNIFICANT ILL-EFFECT LEVEL WAS 0.40 G/KG/DAY. NO MORTALITY OCCURRED. THE DOSAGES (G/KG) ADMINISTERED WERE: 0.99, 0.36, AND 0.15 FOR FEMALES; AND 0.90, 0.43, AND 0.17 FOR MALES. CLINICAL OBSERVATIONS INCLUDED SLIGHT TO SEVERE DEPRESSION OF WEIGHT GAIN, AND INCREASED LIVER WEIGHTS.

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